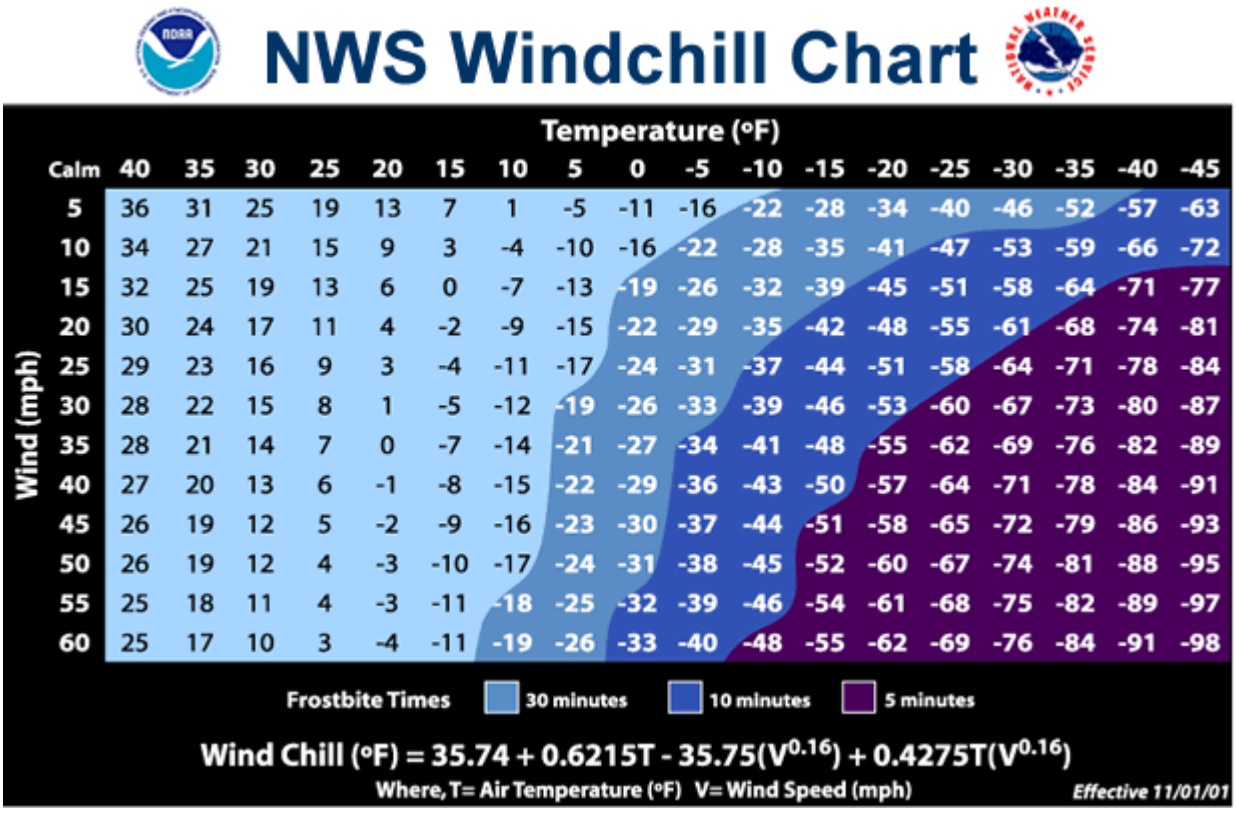
KSHSAA Cold Weather Guidelines

Cold injuries/illnesses are a common result of exposure to cold environments during physical activity. The effects of cold weather can impact the health and safety of individuals participating in outdoor practices or games. If participants cannot maintain proper body heat, cold injury/illness can occur. Temperatures do not have to be freezing to have an adverse effect on the way a person regulates their body temperature. Any individual can lose body heat when exposed to cold air, but when the physically active cannot maintain heat, cold exposure can be uncomfortable, impair performance and may be life threatening. The Kansas State High School Activities Association wishes to provide its member schools recommended guidelines that can be useful in establishing or refining an individualized cold exposure plan or policy, as well as guidelines to help prevent, recognize and treat cold related injury/illness.



The wind chill temperature is how cold people and animals feel when outside. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature. Therefore, the wind makes it FEEL much colder and poses a more severe threat to our bodies.

Cold Exposure Can Be Life Threatening - Know the Signs:

Early recognition of cold stress is important. Shivering, a means for the body to generate heat, serves as an early warning sign. Excessive shivering contributes to fatigue and makes performance of motor skills more difficult. Other signs include numbness, pain, swelling and redness in fingers and toes or a burning sensation of the ears, nose or any exposed flesh. Eyes may be red and watery, and athlete may complain of headache or dizziness.

As cold exposure continues, the core temperature drops. When the cold reaches the brain, a person may exhibit sluggishness, poor judgment and may appear disoriented. Speech becomes slow and slurred, and movements become clumsy. If the participant wants to lie down and rest, the situation is a medical emergency and the emergency action plan should be activated.

Common Cold Exposure Injuries:

Frostnip	A non-freezing injury of the skin, usually of the fingers, toes, ears, cheeks, and chin. Redness, numbness and tingling are present, but no tissue freezing occurs. Symptoms develop when blood vessels supplying the affected tissues narrow because of the cold temperature. Frostnip can occur at temperatures of about 59°F or below. Do not rub affected area, but gently rewarm the skin with clothing or skin contact.
Chilblain	A more significant nonfreezing injury of the skin, which can also occur at temperatures at or below 59°F. Swelling of the exposed area is noted due to the rupturing of blood vessel walls in addition to the redness, numbness and tingling of frostnip. Do not rub affected area, but gently rewarm the skin with clothing or skin contact.
Frostbite	Frostbite is the destruction of body tissues due to freezing which occurs at temperatures 32°F and below. Ice crystal formation in the tissues breaks apart cells, thereby destroying the tissue. Do not rub. Immerse the affected area in a warm, not hot, bath to reheat quickly.
Hypothermia	Abnormally low core body temperature. Because it happens gradually and affects thinking, an athlete may not realize he or she needs help. That makes it especially dangerous. A body temperature below 95° F is a medical emergency and can lead to death if not treated promptly. Symptoms include pale, bluish skin, mental and motor impairment, slurred speech, fatigue, decreased or abnormal heart rate and pulse, slow and shallow breathing. Warm the body as best as possible and activate EMS.
Factors that may contribute to cold injuries include: • dehydration • poor conditioning • wearing wet or tight clothing • malnutrition • altitude • medical conditions associated with poor circulation, such as diabetes, heart disease, anemia, or sickle cell disease.	

Prevention of Cold Exposure Injury

- In cold weather temperatures, properly layered clothing should be worn and encouraged. These include:
  - Several layers around the core of the body to insulate, especially for those individuals who are less active.
  - Long pants designed to insulate. A nylon shell or wind pant on top serves well as a windbreak.
  - Long sleeve shirt/sweatshirt/coat designed to block wind and insulate. These may be layered.
  - Gloves
  - Ear Protection/Hat
  - Wicking socks that do not hold moisture inside. Cotton absorbs and holds moisture; wool is a better alternative.
  - Athletes who are not dressed adequately for the weather should not be allowed to participate for his or her safety.
- Cold exposure requires more energy from a body. Additional caloric intake may be required to support energy needs.
- Cold weather activity has similar hydration needs to warm weather activity. Athletes lose more water through respiration and sweat as the air is much drier than in warmer, less windy months. Though the thirst reflex is not activated as quickly in cold, a conscious effort to hydrate before, during and after activity should be made.
- Never allow athletes to train alone in cold weather.

Outdoor Practice Considerations and Guidelines

Wind Chill Temperature	Practice Considerations/Restrictions
Above 35°F	Normal practice
32°F- 35°F without precipitation	No more than 1 hour outside per session May return outside after 30 minutes indoors
33°F- 35°F with precipitation	No more than 40 minutes outside per session May return outside after 20 minutes indoor
26°F- 31°F without precipitation	No more than 30 minutes outside per session May return outside after 15 minutes indoors
32°F or below with precipitation	No outside practice
25°F or below without precipitation	No outside practice

Athletes should wear dry clothing that covers the extremities including dry socks and gloves

Outdoor Competition Considerations and Guidelines

Wind Chill Temperature	Competition Event Considerations/Restrictions
30°F and below	Be aware of the potential for cold injury and notify appropriate personnel of the potential.
25°F and below	Provide additional protective clothing, cover as much exposed skin as practical, and provide opportunities and facilities for rewarming.
15°F and below	Consider modifying activity to limit exposure or to allow more frequent chances to rewarm.
0°F and below	Consider terminating or rescheduling the event.

Athletes should wear dry clothing that covers the extremities including dry socks and gloves

Additional Considerations and Guidelines for Competition

- **Before event**
  - Evaluate immediate and projected weather information, including air temperature, wind, chance of precipitation or water immersion, and altitude.
  - Encourage proper hydration and nutrition, and discourage alcohol and drug use.
  - Coordinate a schedule of hydration and/or feeding.
  - Ensure that athletes and coaches know the signs and symptoms of cold injury.
  - Identify participants at a high risk of cold injury. Risk factors include the following:
    * Lean body composition
    * Females
    * Older age
    * Lower fitness level
    * Presence of comorbidity (eg, cardiac disease, anorexia, Raynaud syndrome, exercise-induced bronchospasm)
  - Encourage proper conditioning and appropriate equipment and clothing choices.
  - Coordinate a schedule of rewarming or clothing changes as needed.
  - Identify possible activity modifications as conditions change (e.g., change activity times, allow more frequent chances to rewarm, allow changes to clothing or equipment).
  - Have alternate plans in place for deteriorating conditions and activities that must be adjusted or canceled.
  - Develop a schedule for monitoring athletes to allow early recognition of potential injury.

- **Treatment preparations**
  - Ensure medical staff is prepared to identify the signs and symptoms of cold injury.
  - Ensure medical staff has proper equipment and skills to assess cold injury, including assessment of low core temperatures.
  - Prepare an emergency action plan in the event that rapid transport is necessary.
  - Prepare active rewarming equipment (eg, whirlpool, hot packs, towels, blankets, dry clothing).
  - Identify warm, dry areas for athletes to passively rewarm, recover, or receive treatment.
  - Provide direct on-site (ie, sideline) means of passive rewarming (eg, additional clothing, space heaters).

- **Event management**
  - Evaluate immediate and projected weather information, including air temperature, wind, chance of precipitation or water immersion, and altitude.
  - Provide food and fluids.
  - Provide warming facilities.
  - Provide additional clothing and equipment for varying conditions.
  - Implement exposure control and rewarming schedules as needed.
  - Monitor environmental conditions and athletes regularly.